REMARKS/ARGUMENTS

Claims 9-13, 15, 17-21, 23, 24, and 26 are pending in this application. By this Amendment, Applicant amends Claims 9, 15, 17, and 24 and cancels Claims 14, 16, 22, and 25.

The Abstract of the Disclosure was objected to for allegedly including more than one paragraph. Applicant respectfully traverses this objection. In the Preliminary Amendment filed on March 23, 2006, the Abstract of the Disclosure was amended so as to include only one paragraph. Accordingly, Applicant respectfully requests reconsideration and withdrawal of this objection.

Claims 9-26 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) in view of Nakahira (GB 2087688). Claims 14, 16, 22, and 25 have been canceled. Applicant respectfully traverses the rejection of Claims 9-13, 15, 17-21, 23, 24, and 26.

Claim 9 has been amended to recite:

A speaker comprising:

> a diaphragm arranged to vibrate in a direction extending along a surface of the speaker so as to emit sound waves in a vibration direction of the diaphragm; and
>
> **at least one wall member arranged on a sound-wave emission side of the diaphragm**; wherein
>
> **the at least one wall member and the diaphragm are secured to each other, and the wall member vibrates along with the vibration of the diaphragm**; and
>
> **a height of the at least one wall member is substantially the same as a maximum amplitude of the diaphragm**. (emphasis added)

Applicant's Claims 15, 17, and 24 recites feature that are similar to the features recited in Applicant's Claim 9, including the above-emphasized features.

The Examiner alleged that AAPA teaches all of the features recited in Applicant's Claims 9, 15, 17, 24, except for the features of at least one wall member or a plurality of tubular elements arranged on a sound-wave emission side of the diaphragm, the at least one wall member or the plurality of tubular elements and the diaphragm being secured to each other, and the at least one wall member or the plurality of tubular members vibrate along with the vibration of the diaphragm. The Examiner further

alleged that Nakahira teaches these features. Thus, the Examiner concluded that it would have been obvious "to include ribs onto the body of the diaphragm so as to provide improve[d] tone quality of the reproduced sound."

Applicant's Claim 9 has been amended to recite the feature of "a height of the at least one wall member is substantially the same as a maximum amplitude of the diaphragm." Applicant's Claims 15, 17, and 24 have been similarly amended. Support for the features recited in Applicant's Claims 9, 15, 17, and 24 is found, for example, in Applicant's original Claims 14, 16, 22, and 25.

With the unique combination and arrangement of features recited in Applicant's Claims 9, 15, 17, and 24, including the features of "at least one wall member arranged on a sound-wave emission side of the diaphragm," "the at least one wall member and the diaphragm are secured to each other, and the wall member vibrates along with the vibration of the diaphragm," and "a height of the at least one wall member is substantially the same as a maximum amplitude of the diaphragm" as recited in Applicant's Claim 9, and similarly in Applicant's Claims 15, 17, and 24, Applicant has been able to provide a speaker in which leakage of air compressed by the vibrations of the diaphragm from the sound-wave emission side to the side of the diaphragm is prevented and the wall member causes no sound distortion due to resonance and enables reproduction of high quality sound that accurately corresponds to the original source (see, for example, paragraphs [0016] to [0020] of Applicant's Substitute Specification).

With respect to Applicant's original Claims 14, 16, 22, and 25, the features of which are now recited in Applicant's Claims 9, 15, 17, and 24, the Examiner stated, "[T]he Examiner considers that it would have been [an] obvious matter of design choice to provide ribs with *similar height configuration to the maximum amplitude of the diaphragm* because it has been held that changing the size is a matter of obvious design choice to a person of ordinary skill in the art." Applicant respectfully disagrees.

In *Ex Parte Rohrer et al,* Appeal 2009-001292, Decided February 5, 2010, the BPAI stated:

> To support a conclusion that a claim is directed to obvious subject matter... an Examiner must present a "convincing line of reasoning' as to **why one of ordinary skill in the art would have found the claimed invention to have been obvious**. *Ex parte Clapp*, 227 USPQ 972, 973 (BPAI 1985). When determining whether a rejection based on design choice is appropriate, the Examiner must review the Specification and ascertain **if the limitation in question is disclosed as serving any advantage or particular purpose, or whether it solves a stated problem**. The Examiner also should **explain the reasoning used to determine that the prior art would have performed equally as well as the claimed invention.** These two steps help present the aforementioned "convincing line of reasoning." *Ex parte Clapp*, 227 USPQ at 973. (emphasis added)

The Examiner has failed to provide any technical reason whatsoever why it would have been obvious to modify the ribs 5b of Nakahira, which the Examiner alleged corresponds to the at least one wall member recited in Applicant's Claims 9 and 17 and the plurality of tubular elements recited in Applicant's Claims 15 and 24, so as to have a height that is substantially the same as a maximum amplitude of the diaphragm, and most certainly has failed to provide a convincing line of reasoning that such a modification would have been obvious.

The Examiner alleged that to modify the ribs 5b of Nakahira so as to have a height that is substantially the same as a maximum amplitude of the diaphragm, as recited in Applicant's Claims 9, 15, 17, and 24, would have required a mere change in the size of the ribs 5b of Nakahira. This is clearly incorrect.

In contrast to the Examiner's allegations, Applicant's Claims 9, 15, 17, and 24 require much more than a mere change is size of the prior art devices, and instead, require a specific relationship between the maximum amplitude of the diaphragm and the height of the at least one wall member and the plurality of tubular members. Nakahira fails to teach or suggest any relationship whatsoever between the maximum amplitude of the diaphragm and the height of the ribs 5b of Nakahira, that there could or should be a relationship between the maximum amplitude of the diaphragm and the height of the ribs 5b of Nakahira, or that any advantages or benefits could be obtained by a specific relationship between the maximum amplitude of the diaphragm and the height of the ribs 5b of Nakahira.

In addition, by setting the height of the at least one wall member or the plurality of tubular elements to be substantially the same as the maximum amplitude of the diaphragm, the wall member and the tubular elements produce no resonance while capturing all air in front of the diaphragm so as to advantageously produce a speaker that is capable of reproducing sounds of all frequencies ranging from low to high frequencies that accurately correspond to input signals, or in particular, that is capable of reproducing low frequency sounds even with a small diameter (see, for example, paragraphs [0045] to [0049] of Applicant's Substitute Specification).

The Examiner has failed to provide any explanation or reasoning whatsoever that was allegedly used or relied upon to determine that the speaker of Nakahira would have performed equally as well as the speaker recited in Applicant's Claims 9, 15, 17, and 24, and thus, has clearly failed to present a convincing line of reasoning to support the conclusion that Applicant's Claims 9, 15, 17, and 24 are directed to obvious subject matter.

The ribs of Nakahira are merely provided to serve as reinforcing elements when the body is thin and to improve damping characteristics of the body 1. Nakahira fails to teach or suggest any specific height for the ribs 5b or that any characteristic of the body 1 of Nakahira could be improved by configuring the ribs 5b to have a specific height, and certainly fails to teach or suggest that the ribs 5b of Nakahira could or should possibly be capable of reproducing sounds of all frequencies ranging from low to high frequencies that accurately correspond to input signals or of reproducing low frequency sounds even with a small diameter.

In fact, since the ribs 5b of Nakahira are merely provided to serve as reinforcing elements and to improve damping characteristics, Nakahira clearly fails to recognize that a wall member or a plurality of tubular elements could be used to reproduce sounds of all frequencies ranging from low to high frequencies that accurately correspond to input signals or to reproduce low frequency sounds even with a small diameter.

Thus, for at least the reasons described above, it would clearly not have been obvious to modify the ribs 5b of Nakahira so as to have a height that is substantially the same as a maximum amplitude of the diaphragm. In addition, the combination of AAPA

and Nakahira et al. clearly fails to teach or suggest the feature of "a height of the at least one wall member is substantially the same as a maximum amplitude of the diaphragm" as recited in Applicant's Claim 9, and similarly in Applicant's Claims 15, 17, and 24, and, as such, the Examiner has failed to establish a *prima facie* case of obviousness in the rejection of Claims 9, 15, 17, and 24 over AAPA and Nakahira.

Therefore, Applicant respectfully submits that AAPA and Nakahira, applied alone or in combination, fail to teach or suggest the unique combination and arrangement of features recited in Applicant's Claims 9, 15, 17, and 24.

Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection of Claims 9, 15, 17, and 24 under 35 U.S.C. § 103(a) as being unpatentable over AAPA in view of Nakahira.

In view of the foregoing amendments and remarks, Applicant respectfully submits that Claims 9, 15, 17, and 24 are allowable. Claims 10-13, 18-21, 23, and 26 depend upon Claims 9, 17, and 24, and are therefore allowable for at least the reasons that Claims 9, 17, and 24 are allowable.

In view of the foregoing amendments and remarks, Applicant respectfully submits that this application is in condition for allowance. Favorable consideration and prompt allowance are solicited.

The Commissioner is authorized to charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-1353.

Respectfully submitted,

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